Presidential Address by

Joshua Lederberg

AT HIS INSTALLATION AS PRESIDENT

OF THE ROCKEFELLER UNIVERSITY

Occasional Papers of

The Rockefeller University

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JOSHUA LEDERBERG

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First of all, my welcome to you to this exhilarating occasion, and my particular thanks to those of you who have come a long way from all parts of the world. I am also especially pleased to see those of you who have traversed 68th Street or York Avenue in the mood of fellowship and cooperation that should increasingly bind our respective institutions.

Why would so many people go to such trouble for an event of this kind? Anyone who has ever had to arrange for more than a dozen people will respect the fuss and labor that it must entail. From my own perspective, a ceremonial like this mainly gives pause to a new incumbent, and to a venerable institution, for a process of self-examination from which both may profit.

I am reminded of James B. Conant's admonition describing the beginning of his long service as president of Harvard University, after having returned there from a distinguished career as a laboratory organic chemist. How grateful he was, he wrote in his autobiography, that he was inadvertently thwarted in his plan to publish his initial thoughts on entering: "... that would have hung around my neck during the next 20 years like the albatross of the ancient mariner."

But I am going to disregard his implicit advice, as indeed I have tried hard to exhibit other disqualifications for an administrative role, by trying to continue to behave as a laboratory scientist. In the latter role, it is important to bring speculative ideas to the surface, where others, as well as myself, can have a better opportunity to criticize, sometimes even to discard, them. Furthermore, the scientist should be quite fearless about appearing to be naive, ignorant, or even foolish—too often if you think you know the answer, you don't understand the problem! My remarks are, then, in no respect settled truths, but reflect

initial quandaries and dilemmas in my trying to understand the larger aspects of new responsibilities.

The fact is that none of our institutions can evade the most critical examination, in the present climate of skepticism and inquiry about our entire social fabric. If we do not examine and sometimes reform *ourselves*, others will do so with even less information and insight. This is then an apt moment to ask, as we should be prepared to ask at any moment, "Just what would be lost if we disappeared from the face of the earth?"

Perhaps there is even some special advantage in an incumbent's tackling these issues before he is indeed encumbered by his day-to-day obligations, and before he is embraced by the traditions and setting of an institution so manifestly captivating as to prejudice that essential self-examination. In fact, before proceeding more broadly, there are two local elements of our setting worthy of comment.

First, this is the season of the equinox, with its unpredictable alternations of climate and mood. In the ancient traditions of my co-religionists, the community built the harvest tabernacle as a symbol of the indispensibility and frailty of our human constructions, of reliance on a benign Providence for the recurrence of the nourishing rains, and as a shelter against the torrential winds. In pursuing our academic plans, we must still rely both on optimistic faith in ourselves and on the support of a larger community.

In the crass terms of modern industrial society, a one-percent fluctuation in the rate of inflation is the margin between fiscal stability and disciplined growth on the one hand, and an inexorable slide into insolvency on the other. We may congratulate ourselves in being far closer to equilibrium today than are most other private academic institutions. The most onerous and demoralizing adjustments—the painful task of my predecessor Dr. Fred Seitz—are already behind us. With hard work and just moderate good luck, we have a planning framework for vigorous survival. But it would take an egregious hubris to ignore the possibility of still other unforeseeable storms; and we must remind ourselves unremittingly how vulnerable we are to the smallest fluctuation in public understanding of the integrity and necessity of our mission. The task we face is both a material one of

matching our plans and operations to a realistic model of the resources available, and the spiritual one of sustaining our own confidence in the importance of our work, and of communicating and shaping it to the best interests of the human purposes we ultimately serve.

Another element in the setting for my remarks is the 75th Anniversary celebration of The Rockefeller University, held just two years ago. Much of what I would want to say myself was already captured by the statements of others at that time. Those accounts of the transition from The Rockefeller Institute of Medical Research to The Rockefeller University depict what attracted me to this place: not to invoke radical changes, but to *conserve* the most vital traditions of biomedical research to be found anywhere today.

It has become almost tedious to use this indicator, but of course we do take some pride that still another of our research alumni, Dr. Daniel Nathans, was honored with the Nobel Prize, announced just last week. Dr. Nathans graduated from his clinical residency into laboratory research here under the tutelage of Professor Fritz Lipmann from 1959 to 1962, and I am sure that we all join in collegial congratulations to him. We cannot be doing everything wrong with a consistent record of recognition represented by the placement of Rockefeller University graduates in leadership roles in medical research and education throughout the country.

The fundamental agenda of The Rockefeller University is indeed basic biomedical research of substantial breadth in the tradition of the Institute. The biomedical laboratory is the central focus of medical research today: but it must have a still broader perspective—that of the biochemical laboratory. We are fortunate in a faculty of world-recognized excellence in the behavioral sciences, as well as in experimental biology and pathology. And we can be informed by the still different insights of physics and mathematics.

Now, scientific research is one of the most enthralling games that can occupy the human mind, and those of us who can dedicate our lifework to it are privileged indeed. But the private excitement of the chase for new discovery should not obscure the enormous public stakes of the enterprise—stakes that are trivialized by the attribution of mere curiosity or by the better-selling Frankenstein images of the pop media.

What we learn today about the structure of DNA and of cells, and how these are knit together in a functioning organism, is indispensible tomorrow for what is indeed a war against pain, disease, and death. There is no fundamental reason why we cannot learn to prevent all of the major destroyers of long and happy lives that loom over the world today: heart disease, cancer, mental illness, parasitic afflictions, birth defects, even untimely aging. These tragic events are not inexorable laws of matter and energy—they are side-effects of a natural evolutionary process that is both incomplete in its own script and indifferent to the anguish of the human consciousness as we face our own mortality.

Advances against these threats will not come cheaply, and the main ones will, as the history of science has shown again and again, come from the most unexpected and unprogrammed sources. The careers of thousands of investigators are committed to them, and they, in turn, require a level of material support that must be justified in competition with many short-run social needs. They need moral support as well. The ground rules for the ethical involvement of human subjects in medical research are under constant scrutiny and revision, and evoke an ever more cumbersome bureaucracy of supervision. Above all, the lay citizen needs adequate information to be able to confront his own soul about the choices ahead—whether to be a passive victim of natural disease and disability, or to seize the chance to use new knowledge for a rational frame of healthy life. There has been much, sometimes hysterical, concern about the risks of medical research and the need for public involvement. In my view, the most strident shocks to familiar ways will come from the very *success* of our basic programs of health research. No one will cast a vote against "living"; but we have certainly not begun to face up to the social problems inherent in biological solutions for the prolongation of life, even those that have already been achieved in this century.

The primary responsibility that I avow in my new office is to help sustain the traditions of excellence in science for which The Rockefeller Institute and University has been justly famous for many decades. The creative intellect of its carefully selected and gifted individual members is the bedrock of accomplishment of any institution, and

they must be furnished an environment and resources with which to exercise their gifts. The substantial scope, but simple structure and coherent goals, of this University offer a unique and attractive challenge to scientific leadership. Beyond the list of our sixty independent laboratories is an overarching opportunity to bring different specialties of knowledge and styles of critical thinking together, both to enhance scientific excellence and to confront all of these with the practical challenges of human disease. The remarkable aspects of The Rockefeller University: its appropriate size, traditions, setting, and range of studies on one campus—encompassing molecular biology, the behavioral sciences, and the clinic—all offer unparalleled opportunities for intellectual adventure and human service.

This conception of collegial effort is deeply embedded in the motivations both of our original founder and of the many individuals, corporations, and foundations that have continued to support the programs of The Rockefeller University. At its inception, the federal support of biomedical research, mediated primarily through the National Institutes of Health, was implemented according to similar ideals. Such support is absolutely indispensable and government grants now account for half the annual operating budget of this University. It is predictable but lamentable that this level of federal involvement brings along an egregious degree of centralized management. Most of this funding is directed to the "purchase" of specified research results, packaged in projects, as if major discovery could be marketed according to such specifications. The project grant system, as admirably as it has supported major innovations and discoveries in the past, is now administered in ways that threaten to disintegrate institutions, to discourage the confluence of creative ideas, and to impede opportunistic collaborations of basic science and important clinical applications. One of the most important functions of a private endowment is a countercurrent to the services-rendered concept of the support of research. In its place we return to the concept of venture capital toward the identification of creative individuals and of collegial frameworks better able to achieve the same social ends.

The need for collegiality and the attenuation of internal obstacles to its realization also extend to the relationship between institutions.

Happily situated at the center of an extraordinary complex of medical institutions—being literally now in the shadow of New York and Memorial Hospitals, and immediate neighbors to Cornell University Medical College and the Memorial Sloan-Kettering Cancer Center—we have a remarkable opportunity to match our own intellectual style and skills, and dedication to the most basic science, with the diverse problems and resources of our neighbors. They are deeply preoccupied with medical education and the care of patients on a large scale. These are social values of undeniable worth, but distinct from what we can offer in tracing the underlying causes of disease. I believe we have a particular obligation to focus on preventive health applications: but I fear it will be quite a while before the hospitals are no longer needed. We must work together to meet our categorical social responsibilities, and I am delighted that even in the few weeks of my tenure a number of measures for realistic partnership have been started with the equally enthusiastic concurrence of our neighbors.

In closing, may I recall that I was educated in New York, having had the privilege of access to Stuyvesant High School and to Columbia University and Medical School, to the City's public library system and many other institutions that foster intellectual development. Having been away for many years and now returned, I feel especially keenly how rich are these networks of sources. We are really all non-matriculated students in a metropolitan super-university. I will certainly be doing all I can to enjoy this fare for myself and my colleagues, and to seek ways in which our own specialized institution can most efficiently cooperate with others truly "*pro bono humani generis*," for the benefit of mankind. I am indeed grateful to the Board of Trustees, to my colleagues, and to the community of our supporters and well-wishers for having created such an opportunity.

October 16, 1978